

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 09/528,126
Appellant(s) : Noriyoshi Satoh et al.
Filed : March 17, 2000
Title : RADIO TERMINAL DEVICE
Conf. No. : 2947
Art Unit : 2618
Examiner : Richard Chan
Customer No. : 52054
Docket No. : NGB-32439

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
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APPEAL BRIEF

Sir:

This is an ex parte appeal from the Examiner's final rejection of the pending claims in the Final Office Action dated April 12, 2010. The period for filing the brief in support of the appeal expires on September 24, 2010. If there are any additional fees resulting from this communication, please charge such fees to Deposit Account No.: 16-0820, Order Number: NGB-32439.

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Real party in interest (37 CFR § 41.37(c)(1)(i))

The application is assigned to Panasonic Corporation, which is the real party in interest.

Related appeals and interferences (37 CFR § 41.37(c)(I)(ii))

There are no prior or pending appeals, interferences or judicial proceedings known to appellants, appellants' legal representative, or assignee, that may be related to, directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of claims (37 CFR § 41.37(c)(1)(iii))

Claims 1-11 are pending in this application. Claims 1-9 have been rejected under 35 U.S.C. § 103(a) in the Final Office Action dated April 12, 2010. Claims 10-11 have been objected to in the Final Office Action dated April 12, 2010 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Claims 1-11 are being appealed in this proceeding.

Status of amendments (37 CFR § 41.37(c)(1)(iv))

No claim amendments have been filed subsequent to the final rejection in the Final Office Action dated April 12, 2010.

Summary of claimed subject matter (37 CFR § 41.37(c)(1)(v))

Independent claim 1 defines a radio terminal device that includes a portable telephone. (*See* pg. 4, ll. 18-22; Figs. 1, 2A, 2B). The portable telephone includes a printed circuit board (9) having a plurality of electronic components mounted thereon and having a front surface and a rear surface. (*See* pg. 2, ll. 4-5; pg. 2, ll. 18-19; pg. 5, ll. 6-22; pg. 6, ll. 5-21; pg. 11, ln. 23 – pg. 12, ln. 7; pg. 12, ll. 19-25; pg. 13, ll. 8-10; Figs. 1, 2A, 3, 4). Further, the portable telephone includes an internal antenna (4) (*e.g.*, stored antenna) disposed on the rear surface of the printed circuit board (9). (*See* pg. 2, ll. 8-9; pg. 2, ll. 22-23; pg. 4, ll. 23-24; pg. 10, ln. 24 – pg. 12, ln. 7; pg. 12, ln. 19 – pg. 13, ln. 10; pg. 14, ll. 3-16; Figs. 1, 3, 4).

Additionally, from claim 1, the portable telephone includes a portable telephone housing accommodating the printed circuit board (9). (*See* pg. 1, ll. 5-8; pg. 5, ll. 2-4; Figs. 1, 2A, 2B). The portable telephone housing includes a resin housing (2) (*e.g.*, lower case) covering the rear surface of the printed circuit board (9). (*See* pg. 5, ll. 2-4; pg. 10, ll. 14-17; Figs. 1, 2A, 2B, 4). Further, the portable telephone housing includes a metal housing (1) (*e.g.*, upper case) covering the front surface of the printed circuit board (9). (*See* pg. 5, ll. 2-4; pg. 7, ln. 18 – pg. 8, ln. 7; pg. 10, ll. 11-14; Figs. 1, 2A, 4). The metal housing (1) has a metal external surface forming an external surface of the portable telephone. (*See* pg. 8, ll. 8-25; Figs. 1, 2A, 4).

Claim 1 also recites that at least a part of the printed circuit board (9), on which the internal antenna (4) is disposed, is accommodated in the resin housing (2). (*See* pg. 3, ll. 5-12; pg. 10, ln. 18 – pg. 11, ln. 3; pg. 12, ll. 19-25; Figs. 1, 2A, 4). Moreover, the metal housing (1) covers the front surface of the printed circuit board (9) while leaving at least the part of the printed circuit board (9) on which the internal antenna (4) is disposed uncovered by the metal housing (1). (*See* pg. 3, ll. 5-12; pg. 10, ln. 18 – pg. 11, ln. 3; pg. 12, ll. 19-25; Figs. 1, 2A, 4).

Claim 2, which depends from independent claim 1, requires that the resin housing (2) and the metal housing (1) are joined with each other by a curved line from a viewpoint of the side of the radio terminal device. (*See* pg. 3, ll. 5-12; pg. 10, ln. 23 – pg. 11, ln. 3; pg. 13, ln. 15 – pg. 14, ln. 2; dashed line between resin housing (2) and metal

housing (1) in Fig. 1; solid line between resin housing (2) and metal housing (1) in Fig. 2A).

Independent claim 5 defines a radio terminal device that includes a portable telephone. (See pg. 4, ll. 18-22; Figs. 1, 2A, 2B). The portable telephone includes a printed circuit board (9) having a plurality of electronic components mounted thereon. (See pg. 2, ll. 4-5; pg. 2, ll. 18-19; pg. 5, ll. 6-22; pg. 6, ll. 5-21; pg. 11, ln. 23 – pg. 12, ln. 7; pg. 12, ll. 19-25; pg. 13, ll. 8-10; Figs. 1, 2A, 3, 4). Further, the portable telephone includes an internal antenna (4) (e.g., stored antenna) disposed on a rear surface side of the printed circuit board (9). (See pg. 2, ll. 8-9; pg. 2, ll. 22-23; pg. 4, ll. 23-24; pg. 10, ln. 24 – pg. 12, ln. 7; pg. 12, ln. 19 – pg. 13, ln. 10; pg. 14, ll. 3-16; Figs. 1, 3, 4).

Claim 5 additional requires that the portable telephone includes a portable telephone housing for accommodating the printed circuit board (9) and the internal antenna (4). (See pg. 1, ll. 5-8; pg. 5, ll. 2-4; Figs. 1, 2A, 2B). The portable telephone housing includes a metal housing (1) (e.g., upper case) that covers a front surface of the printed circuit board (9). (See pg. 5, ll. 2-4; pg. 7, ln. 18 – pg. 8, ln. 7; pg. 10, ll. 11-14; Figs. 1, 2A, 4). The metal housing (1) has a metal external surface forming an external surface of the portable telephone. (See pg. 8, ll. 8-25; Figs. 1, 2A, 4). Further, the portable telephone housing includes a resin housing (2) (e.g., lower case) that covers a rear surface of the printed circuit board (9). (See pg. 5, ll. 2-4; pg. 10, ll. 14-17; Figs. 1, 2A, 2B, 4).

Further, claim 5 recites at least a part of the rear surface side of the printed circuit board (9), on which the internal antenna (4) is disposed, is accommodated in the resin housing (2). (See pg. 3, ll. 5-12; pg. 10, ln. 18 – pg. 11, ln. 3; pg. 12, ll. 19-25; Figs. 1, 2A, 4). Moreover, the metal housing (1) covers the front surface of the printed circuit board (9) while leaving at least the part of the rear surface side of the printed circuit board (9) on which the internal antenna (4) is disposed uncovered by the metal housing (1). (See pg. 3, ll. 5-12; pg. 10, ln. 18 – pg. 11, ln. 3; pg. 12, ll. 19-25; Figs. 1, 2A, 4).

Claim 6, which depends from independent claim 5, requires that the resin housing (2) and the metal housing (1) are joined with each other by a curved line from a viewpoint of the side of the radio terminal device. (See pg. 3, ll. 5-12; pg. 10, ln. 23 – pg. 11, ln. 3; pg. 13, ln. 15 – pg. 14, ln. 2; dashed line between resin housing (2) and metal

housing (1) in Fig. 1; solid line between resin housing (2) and metal housing (1) in Fig. 2A).

Ground of rejection to be reviewed on appeal (37 CFR § 41.37(c)(1)(vi))

Whether claims 1-9 were improperly rejected under 35 U.S.C. § 103(a) as unpatentable over Yokoyama (EP 0 522 538 A2) in view of Crowley et al. (U.S. Patent No. 5,493,702).

Argument (37 CFR § 41.37(c)(1)(vii))

For at least reasons discussed below, the Examiner's conclusion that claims 1-9 are unpatentable over Yokoyama in view of Crowley et al. is incorrect, and the rejection of claims 1-9 and the objection to claims 10-11 as being dependent upon rejected base claims are improper.

Whether claims 1-9 were improperly rejected under 35 U.S.C. § 103(a) as unpatentable over Yokoyama (EP 0 522 538 A2) in view of Crowley et al. (U.S. Patent No. 5,493,702).

Each of claims 1-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yokoyama in view of Crowley et al. Reversal of this rejection is respectfully requested at least in view of discussion set forth below. Yokoyama and Crowley et al., alone or in combination, do not disclose or suggest each and every element of the subject claims.

I. Claims 1, 3-5, and 7-9

Claim 1 recites a portable telephone including ... a portable telephone housing ... configured by a *resin housing* covering the rear surface of the printed circuit board *and* a *metal housing* covering the front surface of the printed circuit board and having a metal external surface forming an external surface of the portable telephone. Yokoyama does not disclose or suggest at least a portable telephone including a portable telephone housing that includes a *resin housing and a metal housing* having a *metal external surface forming an external surface of the portable telephone*. Instead, Yokoyama notes that “[t]he radio section, the antenna section 31, and the printed circuit board are accommodated in a housing 32 made of, for example, a plastic material.” (See col. 2, ll. 53-56). Further, Yokoyama states that “[t]wo housings formed with a plastic material or the like, namely, a housing 15a forming a front surface of the apparatus and a housing 15b forming a rear surface thereof are combined with each other to accommodate in a space there-between the radio section 12, the antenna section 13, and the printed circuit board 11 on which the sections 12 and 13 are mounted. (See col. 3, ll. 51-58). Moreover,

as stated in Yokoyama, “[i]n the housing 32, there is disposed a shielding case 33 constituted such that only the radio section is contained therein and the antenna section 31 is exposed to a space outside thereof” and the “shielding case is ordinarily manufactured with a thin plate of metal.” (See col. 2, ln. 56 – col. 3, ln. 4) (emphasis added). Rather than a housing 32 that includes two housings 15a and 15b, which are both made of plastic material, and a metal shielding case located inside the two plastic housings as provided by Yokoyama, the portable telephone housing of claim 1 includes a resin housing and a *metal housing*, where the metal housing provides a *metal external surface forming an external surface of the portable telephone*. Accordingly, Yokoyama fails to disclose or suggest at least a portable telephone housing configured by a resin housing and a metal housing having a metal external surface forming an external surface of the portable telephone as recited in independent claim 1.

Crowley et al. does not make up for the aforementioned deficiencies of Yokoyama with regards to a portable telephone housing configured by a resin housing and a *metal housing having a metal external surface forming an external surface of the portable telephone* as recited in independent claim 1. Crowley et al. instead discloses a “docking system [that] includes a housing which also captures the hand-held cellular telephone,” where the “housing comprises a metal case, such as aluminum.” (See col. 1, ll. 45-55). The housing “is divided into an antenna receiving compartment 18, and a cellular telephone receiving compartment 20.” (See col. 3, ll. 7-10). Further, in Crowley et al., a “telephone 12 is arranged to be snugly received within the telephone compartment 20” and “an antenna 22 [is] disposed within the [antenna receiving] compartment 18.” (See col. 3, ll. 34-35; col. 3, ll. 48-49). The docking arrangement housing 16 provided by Crowley et al. is not a part of a portable telephone, but instead is part of a docking arrangement for a portable telephone 12. In Crowley et al., a portable telephone 12 having its own portable telephone housing is placed into the docking arrangement housing 16. Clearly, the docking arrangement housing 16 is not a part of a portable telephone. Thus, Crowley et al. fails to disclose or suggest a portable telephone housing configured by a resin housing and a *metal housing having a metal external surface forming an external surface of the portable telephone* as recited in independent claim 1.

Appellants submit that the cited combination of references teaches a portable telephone with a plastic housing, as taught by Yokoyama, and a *separate*, metal docking arrangement housing 16, as taught by Crowley et al. The cited references do not teach, or otherwise render foreseeable, a portable telephone including a portable telephone housing configured by a resin housing and a metal housing having a metal external surface forming an external surface of the portable telephone. Advantages provided by the claimed housing are rigidity and shock resistance without shielding an internal antenna.

Claim 1 further requires that the internal antenna be disposed on a rear surface of a printed circuit board and that the resin housing covers the rear surface of the printed circuit board, and that the metal housing forming an external surface of the telephone covers a front surface of the printed circuit board (the front and rear surfaces are two different surfaces of the printed circuit board). In the hypothetical combination of the telephone from Yokoyama and the docking arrangement from Crowley et al., the docking arrangement housing 16 and metal capacitive ground back plating 34 from Crowley et al. would cover the rear side of the plastic housing from Yokoyama. As shown in Fig. 2, the housing 16 from Crowley et al. does not cover the front of a portable telephone. The front surface of the circuit board from Yokoyama would be covered by the plastic housing and an internal shielding case, but not by any metal housing forming an external surface of the telephone. Appellants submit that the cited references do not teach, or otherwise render foreseeable, a metal housing forming an external surface of the telephone and covering the front surface of the printed circuit board.

Moreover, claim 1 requires that the metal housing covers the front surface of the printed circuit board while leaving at least the part of the printed circuit board on which the internal antenna is disposed uncovered by the metal housing. In the hypothetical combination of the telephone from Yokoyama and the docking arrangement from Crowley et al., the internal antenna in the telephone from Yokoyama would be located within the metal housing 16 of Crowley et al. Therefore, the internal antenna and the part of the circuit board on which the internal antenna is disposed would be covered by the metal housing 16 from Crowley et al. Accordingly, appellants submit that the cited references do not teach, or otherwise render foreseeable, a portable telephone housing configured by metal housing forming an external surface of the telephone that covers the

front surface of a printed circuit board while leaving at least the part of the printed circuit board on which an internal antenna is disposed uncovered by the metal housing.

Further, if the metal housing 16 of Crowley et al. were modified to cover the front surface of a printed circuit board while leaving at least the part of the printed circuit board on which an internal antenna is disposed uncovered by the metal housing, then Crowley et al. would be rendered unsatisfactory for its intended purpose. If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) (MPEP 2143.01(V)). Crowley et al. provides the antenna receiving compartment to *fully enclose* the antenna of the telephone inserted into the docking system to provide RF shielding. (See col. 3, ll. 10-13). In Crowley et al., the telephone is held and operated within the docking system to effectively shield occupants from potentially harmful RF energy. (See col. 4, ll. 18-21). Thus, if the metal housing 16 of Crowley et al. were to be modified to cover the front surface of the printed circuit board while leaving at least the part of the printed circuit board on which the internal antenna is disposed uncovered by the metal housing, then Crowley et al. would no longer fully enclose the antenna, and thus, may not shield occupants from potentially harmful RF energy. Accordingly, it is set forth that the Examiner has failed to establish a *prima facie* case for obviousness with respect to claim 1 since such modification of Crowley et al. would cause it to be unsatisfactory for its intended purpose.

Moreover, modification of the metal housing 16 of Crowley et al. to cover the front surface of a printed circuit board while leaving at least the part of the printed circuit board on which an internal antenna is disposed uncovered by the metal housing would change the principle of operation as set forth in Crowley et al. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) (MPEP 2143.01(VI)). Crowley et al. fully encloses the antenna of the telephone inserted into the docking system, while an external antenna is arranged to pickup RF signals and keep them from close proximity to a person who is using the

telephone. (See col. 3, ll. 10-13; col. 4, ll. 1-4). Modifying the metal housing 16 of Crowley et al. to cover the front surface of the printed circuit board while leaving at least the part of the printed circuit board on which the internal antenna is disposed uncovered by the metal housing would lead to the antenna of the telephone inserted into the docking system to no longer be fully enclosed. Further, the external antenna would no longer be arranged to keep the RF signals from close proximity to a person who is using the telephone. Thus, appellants submit that the Examiner has not established a *prima facie* case for obviousness with respect to claim 1 since such modification of Crowley et al. would change the principle of operation of Crowley et al.

Appellants further note that the docking system from Crowley et al. is part of an antenna transmission coupling arrangement for use with portable telephones having an external antenna. (See Fig. 1). The coupling system from Crowley et al. shields the external antenna, permitting shielded use of the cellular telephone. (See col. 3, ll. 7-14). The telephone from Yokoyama has only an internal antenna and, therefore, is incompatible with the antenna transmission coupling arrangement from Crowley et al. Accordingly, one of ordinary skill in the art would not place the telephone from Yokoyama into the docking arrangement from Crowley et al. and would not combine these references as suggested in the Final Office Action dated April 12, 2010. Accordingly, appellants submit that the Examiner has not established a *prima facie* case for obviousness with respect to claim 1.

Further, the Examiner's reasons for why the invention would have been obvious (to make the phone structurally tough and strong at pages 3 and 4 of the Final Office Action) are not found in the cited references, but in the present application. Yokoyama, for example, discusses the shielding case within the resin housing as prior art. In order to reduce the size and weight of the portable telephone, Yokoyama employs an electrically conductive film. (See col. 1, ll. 35-41; col. 4, ll. 1-5). Therefore, Yokoyama teaches to use less metal in the telephone, not more, and effectively teaches away from aspects recited in independent claim 1. Neither reference teaches to make a portable telephone structurally tougher or stronger by employing a metal external housing and a resin housing. Accordingly, appellants submit that the Examiner has not established a *prima facie* case for obviousness with respect to claim 1.

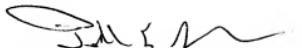
In view of the above remarks, appellants respectfully submit that claim 1 is allowable over Yokoyama in view of Crowley et al. Claims 3-4 and 9 depend from claim 1. The arguments provided above with respect to claim 1 also apply to claims 5 and 7-8.

II. Claims 2 and 6

Claim 2, which depends from independent claim 1, recites the resin housing and the metal housing are joined with each other by a curved line from a viewpoint of the side of the radio terminal device. Yokoyama and Crowley et al., alone or in combination, fail to disclose or suggest such claimed aspects. More particularly, Yokoyama provides a housing 15a forming a front surface of the apparatus and a housing 15b forming a rear surface. (*See* col. 3, ll. 51-54). The housing 15a and the housing 15b are combined with each other to accommodate in a space there-between the radio section 12, the antenna section 13, and the printed circuit board 11 on which the sections 12 and 13 are mounted. (*See* col. 3, ll. 51-58). Fig. 2 of Yokoyama depicts the housing 15a and the housing 15b. While the housing 15a and the housing 15b are combined with each other, Fig. 2 of Yokoyama shows the housings 15a and 15b being joined by a straight line from a viewpoint of the side of the radio terminal device rather than being joined by a curved line from a viewpoint of the side of the radio terminal device. Thus, Yokoyama does not disclose or suggest at least the resin housing and the metal housing are joined with each other by a curved line from a viewpoint of the side of the radio terminal device. Moreover, Crowley et al. is silent regarding such claimed aspects recited in dependent claim 2. Further, the arguments set forth above regarding claim 2 also apply to claim 6, which depends from independent claim 5.

Respectfully submitted,
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Claims appendix (37 CFR § 41.37(c)(I)(viii))

1. A radio terminal device comprising:
 - a portable telephone, the portable telephone including:
 - a printed circuit board having a plurality of electronic components mounted thereon and having a front surface and a rear surface;
 - an internal antenna disposed on the rear surface of the printed circuit board; and
 - a portable telephone housing accommodating the printed circuit board, the portable telephone housing configured by a resin housing covering the rear surface of the printed circuit board and a metal housing covering the front surface of the printed circuit board and having a metal external surface forming an external surface of the portable telephone,
 - wherein at least a part of the printed circuit board, on which the internal antenna is disposed, is accommodated in the resin housing, and
 - wherein the metal housing covers the front surface of the printed circuit board while leaving at least the part of the printed circuit board on which the internal antenna is disposed uncovered by the metal housing.
2. The radio terminal device according to claim 1, wherein the resin housing and the metal housing are joined with each other by a curved line from a viewpoint of the side of the radio terminal device.
3. The radio terminal device according to claim 1, wherein the printed circuit board and the metal housing are connected with each other electrically.
4. The radio terminal device according to claim 1, wherein the internal antenna is disposed near an end portion in the part of the printed circuit board.

5. A radio terminal device comprising:
 - a portable telephone, the portable telephone including:
 - a printed circuit board having a plurality of electronic components mounted thereon;
 - an internal antenna disposed on a rear surface side of said printed circuit board; and
 - a portable telephone housing for accommodating said printed circuit board and said internal antenna, said portable telephone housing configured by a metal housing so disposed as to cover a front surface of the printed circuit board and having a metal external surface forming an external surface of the portable telephone, and a resin housing so disposed as to cover a rear surface of the print circuit board,
 - wherein at least a part of the rear surface side of said printed circuit board, on which the internal antenna is disposed, is accommodated in the resin housing, and
 - wherein the metal housing covers the front surface of the printed circuit board while leaving at least the part of the rear surface side of the printed circuit board on which the internal antenna is disposed uncovered by the metal housing.
6. The radio terminal device according to claim 5, wherein the resin housing and the metal housing are joined with each other by a curved line from a viewpoint of the side of the radio terminal device.
7. The radio terminal device according to claim 5, wherein the printed circuit board and the metal housing are connected with each other electrically.
8. The radio terminal device according to claim 5, wherein the internal antenna is disposed near an end portion in the part of the printed circuit board.
9. The radio terminal device according to claim 1, wherein the internal antenna is accommodated in the resin housing.

10. The radio terminal device according to claim 2, wherein the curved line that joins the resin housing with the metal housing forms an inflection point on a side wall of the portable telephone housing between uppermost and lowermost portions of the portable telephone housing.

11. The radio terminal device according to claim 6, wherein the curved line that joins the resin housing with the metal housing forms an inflection point on a side wall of the portable telephone housing between uppermost and lowermost portions of the portable telephone housing.

Evidence appendix (37 CFR § 41.37(c)(1)(ix))

Not applicable.

Related proceedings appendix (37 CFR § 41.37(c)(1)(x))

Not applicable.